STARLINE TWENTY

HOUSING INSTALLATION

U.S. Patents 3,359,460 and D208,983

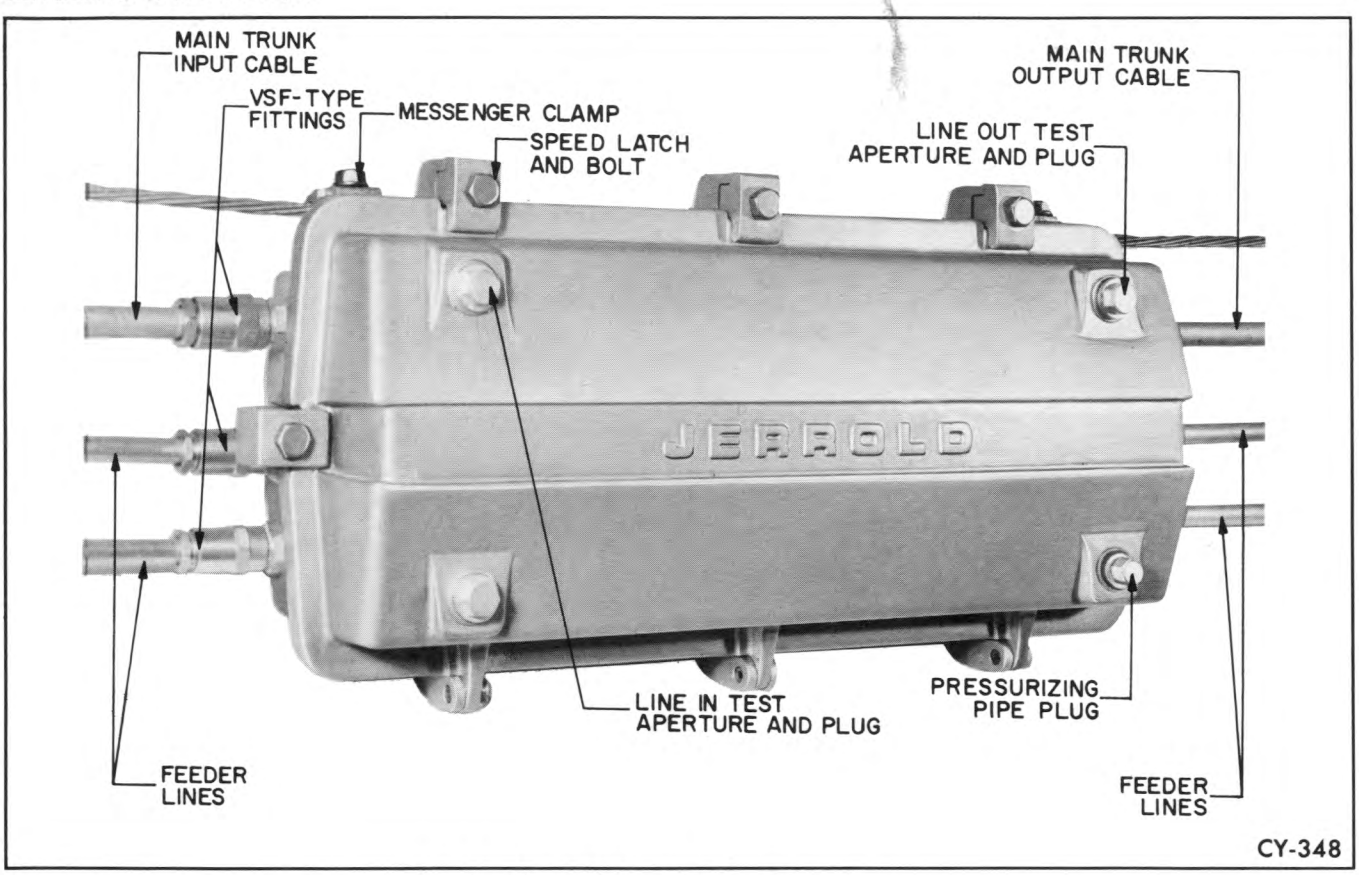

Fig. 1—Vertical Mount Below Messenger

INTRODUCTION

This instruction sheet deals with the physical installation of Starline Twenty Main Trunk Station Housings as used with both one-way and two-way type equipment in either 30 or 60V powering systems. Cast iron housings are to be installed according to a customer's own standard procedure; however, a short description on the sealing of cast iron housings is given. For operating procedures consult the instruction sheets supplied for the relevant electronic packages.

INSTALLATION PROCEDURE

1.0 GENERAL

1.1 Messenger clamp and bolt assemblies are factory-mounted on top of the housing for vertical installation of the unit below a messenger wire. Where the station is to be installed in a different position on the messenger, the clamp and bolt assemblies may have to be relocated at the rear of the housing body; where surface, or pole cross-arm mounting is required, the messenger clamps will have to be replaced by an auxiliary bracket.

1.2 All feeder line apertures where VSF fittings are to be installed have factory-mounted metal plugs; the trunk line apertures have plastic cap plugs. Do not remove the metal plugs on unused feeder line apertures; remove and discard only those plugs where fittings are to be installed. Do not remove the sealing plugs from the test apertures in the lid of the housing or the pipe plug from the pressurizing aperture.

1.3 Be sure you have the necessary type and quantity of VSF fittings and where required also the weatherboots and their sealing rings or, better, the necessary heat-shrinking material and apparatus to effect a weather-tight seal on the fittings.

1.4 In whatever position the station is to be mounted, be sure that with an open lid there will be enough clearance to a nearby telephone or other utility line.

2.0 PREPARATION OF CABLES

2.1 Cut the coaxial cables at the point where the station is to be mounted and remove enough of the lashing wires so that expansion loops can be formed on the cables. Use regular hardware type clamps and fasten the ends of the lashing wire to the messenger.

NOTE: Loops on aluminum cable should have been preformed.

2.2 Prepare the cable ends as required for the type of VSF fittings to be installed in the housing (consult Jerrold Instruction sheets on fittings and connectors). If used, first slide the appropriate weatherboots over the cable ends.

3.0 PREPARATION OF STATION HOUSING

3.1 At locations where a network in a utility housing is to be connected to the station through a Model VHH coupling connector, first install the network before installing the VSF fittings in the station housing. Where Model VHH connector is not used, install the network as referred to in step 4.5, if necessary.

3.2 Remove the plastic cap plugs from the trunk line apertures and the threaded metal plugs from those feeder line apertures where VSF fittings are to be installed. Lubricate the threads on the fittings, then screw the fittings into the apertures. Hand-tighten, then wrench-tighten the hex nut on each fitting adjacent to the aperture. Where required, push the weatherboot sealing ring over the fitting and up against the wall of the housing.

3.3 Slightly loosen the hex head bolts on the messenger clamps.

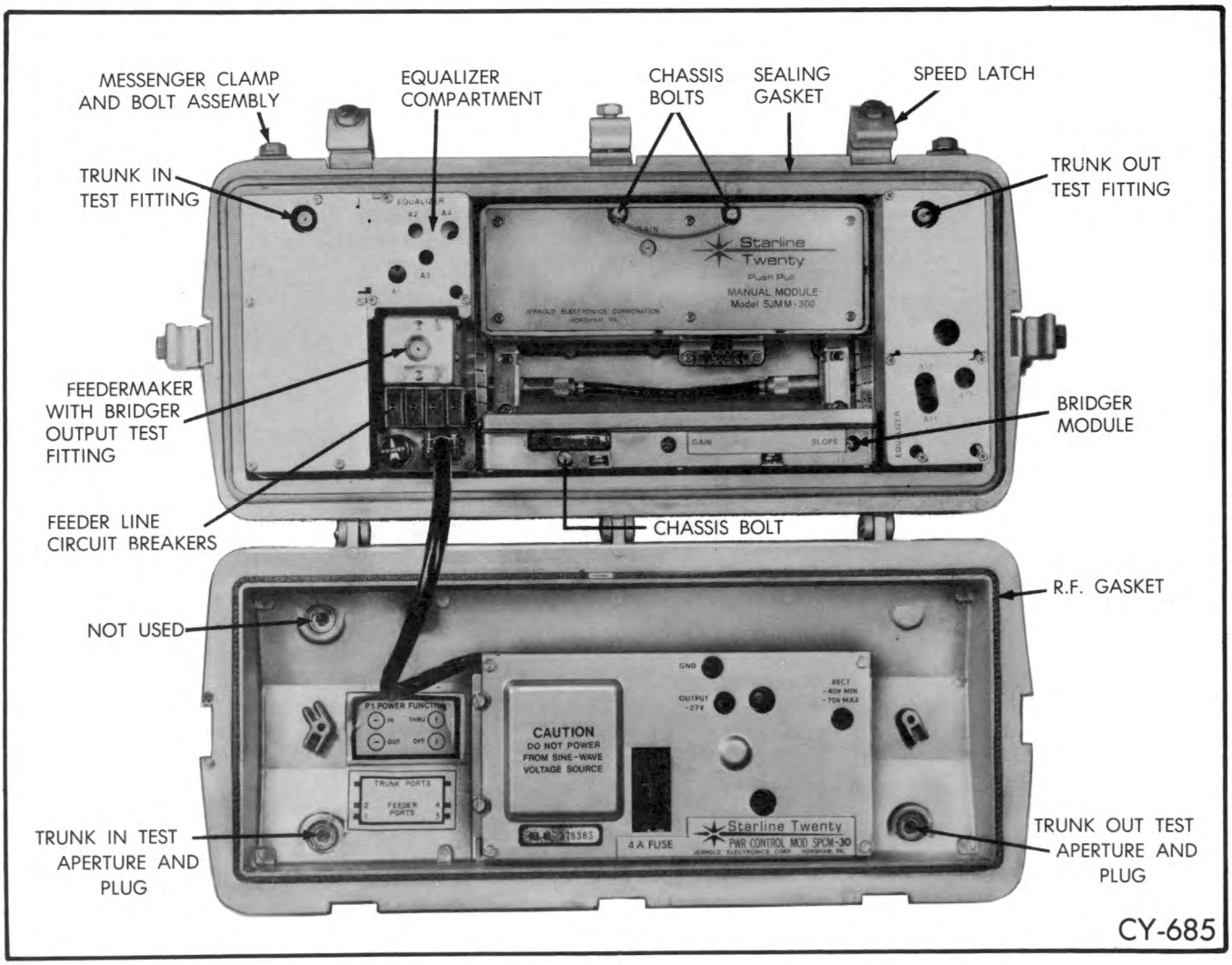

Fig. 2—Typical Trunk Station with SPCM-* Power Pack.

4.0 MOUNTING THE HOUSING ON MESSENGER WIRE

4.1 Hold the closed housing so that you face "JERROLD" cast into the lid, then face the trunk line so that r-f signal flow is from left to right (consult the system lay-out diagram).

4.2 Engage the messenger wire in the clamp assemblies; the clamps will pop open when forced onto the messenger. Tighten the hex head bolts on the clamps one turn only, thus permitting proper positioning of the housing on the messenger wire.

4.3 Loosen all five clamps holding the lid to the housing body; open the housing and let the lid hang down freely.

4.4 Make sure the hex head machine screws and crown washers in the terminal assemblies are loosened so that cable center conductors will not be bent when the cable ends are fed into the assemblies.

4.5 Where required, install the external network at this stage.

4.6 Coat the exposed center conductors at the cable ends with silicone grease; on aluminum-sheathed cables also coat one inch of the sheath.

4.7 Connect one cable end completely before connecting the next cable end; connect all cable ends on one side of the housing before connecting those on the other side.

4.8 Feed the cable end all the way through the VSF fitting until the bare center conductor is visible beyond the crown washer in the terminal assembly.

4.9 Firmly tighten the hex head machine screw in the terminal assembly; use a nut driver or a screwdriver.

4.10 Hand-tighten, then wrench-tighten first the clamp nut, then the gland nut (where cable enters) on the VSF fitting. Recommended final torque on all VSF fittings is 10 to 15 ft. lbs. Where a weatherboot is used, slide the boot all the way over the fitting and over the sealing ring up to the wall of the housing.

4.11 The housing MUST now be closed and is not to be opened until electrical adjustments are to be made on the plug-in modules. Before closing the lid, make sure the sealing gasket in the flange of the housing body and the r-f gasket in the flange of the housing lid are properly positioned in their grooves. Close the lid and secure it with the five clamps; then wrench-tighten the five clamp bolts to a recommended final torque of 5 to 10 ft. lbs.

4.12 Hand-tighten, then wrench-tighten the hex head bolts on the messenger clamps; then lash all cables to the messenger wire at the point where they approach the wire.

4.13 Make sure the plugs on the three test apertures in the lid of the housing are firmly seated; make sure the pipe plug on the pressurizing aperture is firmly seated. Also make sure the metal plugs on any unused distribution line apertures are firmly seated.

5.0 MOUNTING THE HOUSING ON A UTILITY POLE

5.1 For mounting the housing on a utility pole cross-arm, auxiliary bracket Model SPB-1 is required.

5.2 Remove the hex head bolts and then loosen the clamp jaws from the messenger clamp assemblies on the housing.

5.3 Using an Allen wrench, remove the two socket head cap screws from each clamp jaw on the housing.

5.4 Use these cap screws for mounting the bracket at the threaded holes in the rear wall of the housing; the long arm of the cruciform bracket must extend above the top of the housing.

5.5 Firmly wrench-tighten the cap screws.

5.6 Mount the housing on the cross-arm so that the trunk input cable can be conveniently connected. For cross-arm mounting, commercial steel bolts, washers and nuts should be used through the two holes in the vertical arm of the bracket.

5.7 From here on, connection of cables is done in the same manner as described in steps 4.3 to 4.13, except for the reference to the messenger clamps in step 4.12.

6.0 MOUNTING THE HOUSING WITH AUXILIARY HANGER BRACKET ON MESSENGER

6.1 For mounting the housing below a messenger wire which carries a multiple cable line, auxiliary hanger bracket Model AHB-3 is required. Model AHB-3 consists of two individual brackets.

6.2 Remove the entire messenger clamp assemblies from the amplifier housing by first removing the hex head bolts and loose clamp jaws, then the socket head cap screws and clamp jaws from the housing body.

6.3 In place of the messenger clamp assemblies, install the two brackets with the four slotted round head screws supplied.

6.4 Install the messenger clamp assemblies on the brackets. From here on, proceed as in steps 4.1 through 4.13.

7.0 SEALING OF CAST IRON HOUSINGS

7.1 "B" Sealing Compound is used as a gasket for sealing cast-iron housings. The compound is sold in rod form of approximately ¼" diameter.

7.2 First make sure the gasket grooves and flanges of housing body and lid are free from dust and oil.

7.3 Cut an appropriate length of sealant. Start by first inserting the center section of the rod in the area of LOCKING THREAD #7 of the groove in the housing body. The sealant should be stretched somewhat in this area (see Fig. 3) so that an even spread will be achieved when the housing is closed under pressure.

7.4 Then fill in the groove on both sides and on top of the housing until the two ends of the rod meet in the area below LOCKING THREAD #3. Cut off any overlapping portions of the sealing rod.

7.5 By hand slightly engage LOCKING BOLTS #2, 5, 1, 4, 3 and 6 in that order. Start by screwing in first LOCKING BOLTS #1 and 5 one turn, then LOCKING BOLTS #2, 3 and 4 one turn at a time in that order. Repeat this until the gap between the flanges of the lid and the body of the housing has been narrowed to about ⅛". Then start closing LOCKING BOLTS #6, 7 and 8 again one turn at a time. Finally, close every other bolt, in clockwise rotation one turn at a time. The recommended final closing torque is 5 ft. lbs.

7.6 Inspect the housing on all four sides where the flanges meet; an even overflow of sealant all around the flanges is a good indication of proper sealing.

7.7 The square-head jack screws #1 and 2 facilitate opening a sealed housing when servicing is required. To open a sealed housing, first unscrew all eight LOCKING BOLTS; be sure they are completely disengaged from their associated LOCKING THREADS in the housing body. Then, alternately screw the two JACK SCREWS completely into the lid. The lid will become disengaged first from the top of the housing body.

7.8 Pry the lid completely open; use a non-metallic instrument to prevent damage to the flanges.

7.9 When resealing the housing, first remove all of the old sealing compound, then use a new piece of sealing rod, Be sure the JACK SCREWS are completely retracted back into the lid before attempting closure.

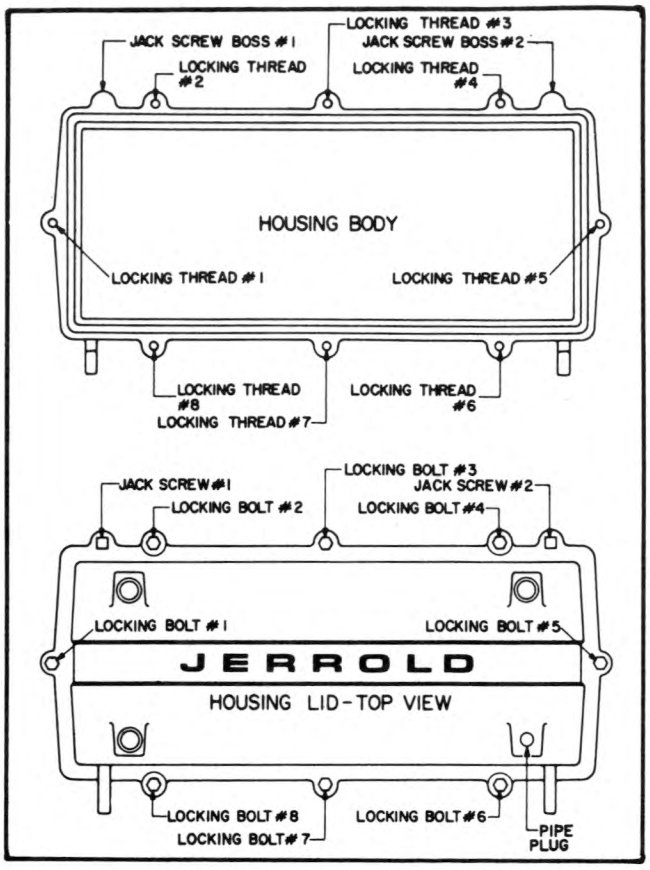

Fig. 3—Cast Iron Housing

8.0 A Model AK-7 adapter fitting kit is available for equipping housings with a seventh port where two housings are to be interconnected to establish a dual trunk cross-over station; see Fig. 4.

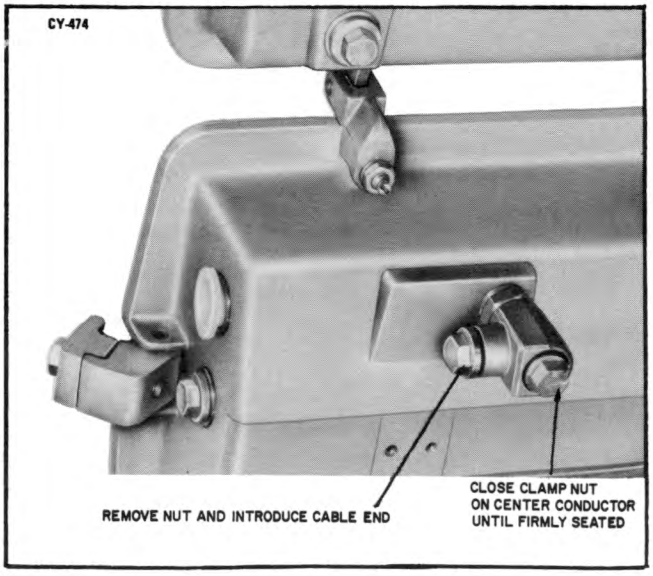

Fig. 4—Model AK-7 Mounted on Housing Bottom

9.0 POWER PACKS

9.1 Depending on specific customer's order, housings are shipped with either:

a. factory-modified Models SPP-S-30P or SPP-S-60P, which have added adaptive power control circuitry;

b. new adaptive power control power packs, Models SPCM-30 or SPCM-60.

Function, performance, and specifications are the same for both types.

9.2 SPECIFICATIONS

	30 V	60 V
AC INPUT VOLTAGE (from square wave source such as SPS-30/60A)	30 V rms max. 23 V rms min.	60 V rms max. 46 V rms min.
POWER CONTROL SENSING VOLTAGE	40 V nominal	80 V nominal
DC OUTPUT VOLTAGE (factory-set)	−27 V ±100 mV max. for AC input limits stated above.	
DC OUTPUT CURRENT	1 A max.	
SWITCHING FREQUENCY	20 to 35 kHz at +250°C ambient; 15 to 70 kHz for different AC input, DC load, and ambient temperatures.	
AC INPUT CURRENT FOR 1A DC OUTPUT LOAD	1.4 A rms for 30 V in 2.0 A rms for 23 V in	0.7 A for 60 V in 1.0 A for 46 V in
AC POWER REQUIREMENT	45 W max. for 1 A load at −27 V.	
FUSING	4 A "SLO-BLO"	2 A "SLO-BLO"
AMBIENT OPERATING TEMPERATURE RANGE	−40°C to +60°C	
NET WEIGHT	3½ lbs.	
OVERALL DIMENSIONS	8½ x 4¾ x 1⅞ inches.	

9.3 CIRCUIT DESCRIPTION

The power pack circuitry consists of two sections:

a. an adaptive power control circuit at the a.c. input;

b. a regulated d.c. supply.

a. Adaptive Power Control

The a.c. input voltage is applied through plug P8 to fuse F101 which is a 4A "Slo-Blo" type for 30 V and a 2A "Slo-Blo" type for 60 V input. As capacitor C101 is charged, a d.c. voltage is applied to the gate of thyristor Q102, turning it on. Since Q102 now draws current through the gate

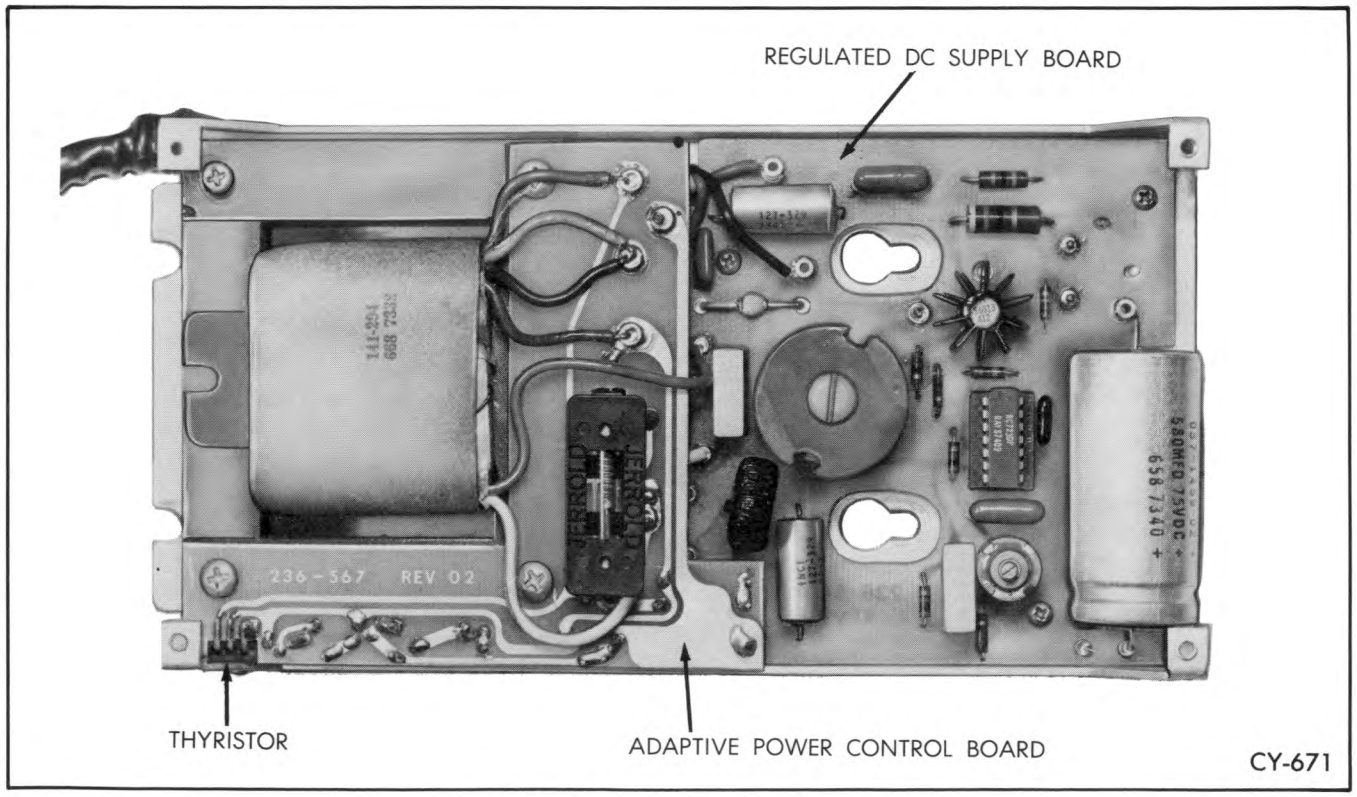

Fig. 5—Power Pack, Cover Removed.

of thyristor Q103, the latter is turned on and connects the low side of transformer T1 primary to ground. The secondary voltage developed in T1 is now applied to a bridge rectifier CR1 in the regulator section of the power pack.

Should an overvoltage occur at the a.c. input terminals, thyristor Q101 is turned on by the trigger circuit CR101/CR102. Capacitor C101 is discharged and Q102 is shut off, turning off Q103 and cutting off the ground return for the T1 primary. The T1 secondary ceases to function as a voltage source; instead, the T1 primary and diode CR104 now become the voltage source for the bridge rectifier and the regulator circuit.

b. Regulated D.C. Supply

With application of $-E_{in}$ from the rectifier bridge to the base of Q2, both Q1 and Q2 are turned on and a magnetic field builds up in choke L1, charging capacitor C6 to a level which is preset by potentiometer R9 to provide an output of −27 V. The integrated circuit U1, consisting of a reference voltage source and an error amplifier, serves to sample the voltage at R9 and compare it with the reference voltage. The output of U1 controls the bias on Q2.

Once C6 reaches full charge (output voltage at −27 V) U1 turns off Q2 and hence Q1. Since the collapsing magnetic field maintains current flow in L1 but reverses the polarity on the choke, a switching diode CR2 is made to conduct and serves as the ground return for L1. Capacitor C6 now discharges through the load and the output voltage falls below the preset level. This is sensed by the error amplifier in U1 which now turns on Q2, starting the cycle all over again. The −27 V output is kept constant by Q1 conducting for periods that vary with the fluctuations of either or both the $-E_{in}$ and the load. Network L2/C7 acts as a conventional ripple filter.

9.4 TEST PROCEDURE

This procedure is given where it is desired to check the power pack for proper operation. After testing and found defective, the unit should undergo a conventional trouble-shooting procedure for identifying and replacing the defective component. The necessary circuit schematics and replacement parts list are given.

Instruments Required

1 POWER SUPPLY	Jerrold Model SPS-30/60A;
1 VARIAC	Any suitable type;
1 WATTMETER	Sensitive Research Model "Universal," or equivalent;
1 AC RMS VOLTMETER	Fluke, Differential Voltmeter Model 931-P, or equivalent;
2 DC VOLTMETER	Hewlett-Packard Model HP-3440A with Automatic Range Selector Model HP-3442A, or equivalent;
1 OSCILLOSCOPE	Tektronix Model 503, or equivalent;
1 RESISTIVE LOAD	27 Ω, 30 W minimum.

Note: All test equipment and the unit under test must be properly interconnected for efficient common ground.

Procedure

1. Make sure the SPS-30/60A is set for the proper output voltage to feed the power pack to be tested.
2. Connect the unit into the test set-up diagrammed in Fig. 6, but do not yet turn on the equipment.
3. Turn the "DC SET" potentiometer R9 on the power pack fully counter-clockwise (for lowest DC output voltage).
4. Set the Variac for zero AC output.
5. Turn on the equipment.
6. Use the Variac to apply about 25 V rms for testing a 30 V unit, or about 50 V rms for testing a 60 V unit. Adjust the "DC SET" control to obtain a reading of −27 V on the DC voltmeter at a 1 ampere load.
7. Vary the AC input from 23 V rms to 30 V rms for a 30 V unit, or from 46 V rms to 60 V rms for a 60 V unit, and observe that the following parameters meet specifications with the varying input voltages:
   a. DC output voltage regulation;
   b. Power consumption on the wattmeter.
8. Disconnect the power pack from the initial test set-up and connect it into the set-up diagrammed in Fig. 2.
9. Set the Variac output to zero.
10. Monitor meter M1 while slowly increasing the Variac output until you read about −50 V; meter M2 should read −27 V.
11. Increase the Variac output until you read about −70 V on meter M1. Any further increase in the Variac output should now register as a sudden sharp drop in the M1 reading to about −20 V in the case of a 30 V unit, or −30 V in the case of a 60 V unit with a simultaneous reading on M2 of −15 V for a 30 V unit or −20 V for a 60 V unit.
12. Continue increasing the Variac output until M1 reads about −50 V and M2 reads −27 V. However, if no sudden drop was registered in the M1 reading in step 11, even when the Variac output was raised to a −90 V reading on M1, the unit should undergo a detailed trouble-shooting procedure.
13. Otherwise, after step 12, an additional increase in the Variac output to about −80 V read on

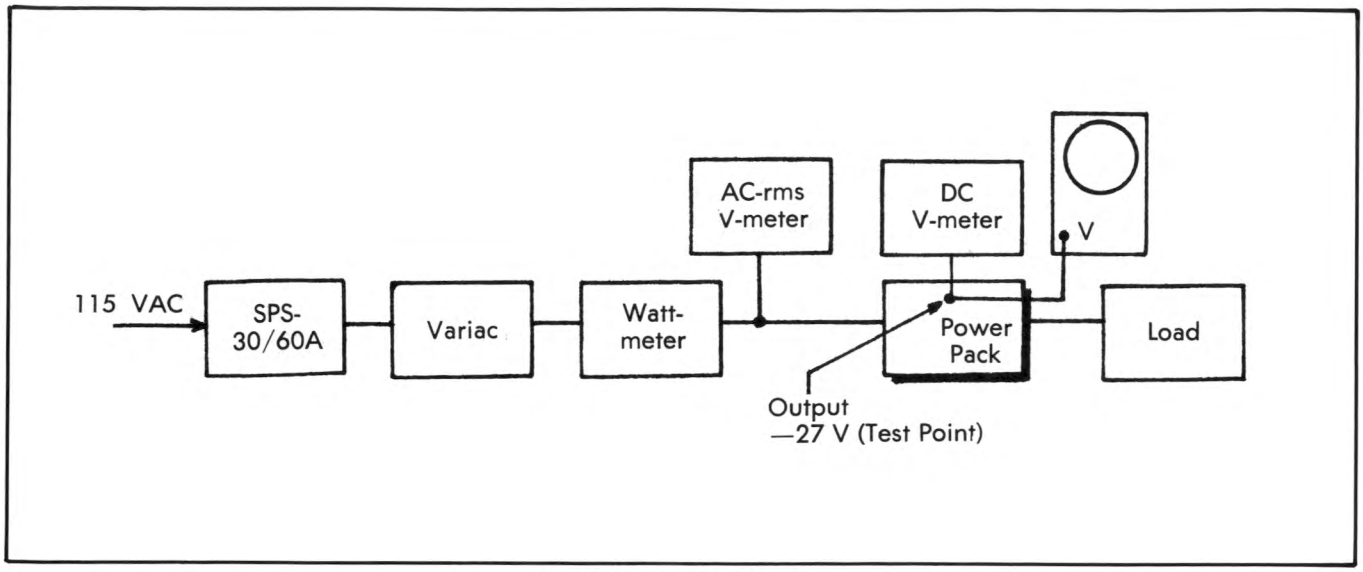

Fig. 6—Initial Test Set-Up

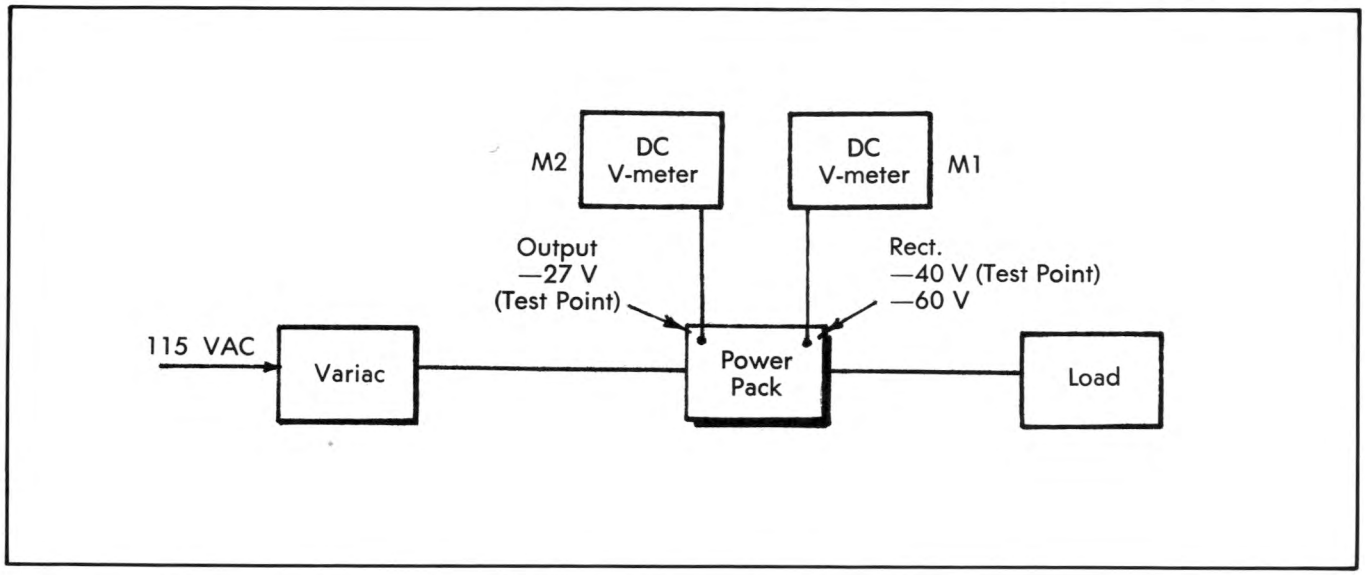

Fig. 7—Overvoltage Test Set-Up

M1 should not result in a change of the M2 reading; it should stay at −27 V ±0.5 V.

14. Now decrease the Variac output to where M1 showed tripping as in step 11. At this point, M1 should indicate a sudden sharp increase to −70 V and, similarly, M2 an increase to −27 V. This now indicates that the adaptive power control circuit cycles properly.

TABLE FOR IDENTIFICATION OF REVISION LEVELS OF FACTORY-MODIFIED POWER PACK MODELS SPP-S-30P and SPP-S-60P

REVISION LEVEL	COMPONENT PART NUMBER											
	C1	C5	Q1	Q3	R1	R2	R6	R11	R12	R13	CR3	CR4
—01	S127-174 (1000 μF) S127-177 (580 μF)	S127-331-00 5 μF	130-288	130-287	112-170 33 Ω	111-015 22 kΩ	112-997 1 kΩ	113-097 1 Ω	112-950 100 Ω	112-997 1 kΩ	137-839	137-841
—02	S127-174 (1000 μF) S127-177 (580 μF)	S127-331-00 5 μF	130-288	130-287	112-170 33 Ω	111-015 22 kΩ	112-104 560 Ω	113-097 1 Ω	112-995 33 Ω	112-997 1 kΩ	137-839	137-841
—03	S127-174 (1000 μF) S127-177 (580 μF)	S127-331-00 5 μF	130-288	130-287	112-170 33 Ω	111-015 22 kΩ	112-104 560 Ω	—	112-995 33 Ω	112-997 1 kΩ	137-844	137-843
—04	S127-174 (1000 μF) S127-177 (580 μF)	125-337 0.1 μF	S195-036	—	112-170 33 Ω	111-015 22 kΩ	112-104 560 Ω	—	—	—	137-844	—
—05	S127-174 (1000 μF) S127-177 (580 μF)	125-337 0.1 μF	S195-036	—	112-233 100 Ω	112-990 15 kΩ	112-104 560 Ω	—	—	—	137-844	—

REPLACEMENT PARTS LISTS FOR MODELS SPP-S-30P and SPP-S-60P

ASSEMBLY NO. 822-532, 823-698 DRAWING NO. 863-693	
SCHEMATIC DESIGNATIONS OR PART DESCRIPTIONS	**JERROLD PART NO.**
CAPACITORS	
C2	125-332
C3	125-324
C4	126-091
C6, C7	S127-329
C8	125-337
DIODES	
CR1	S137-501-01
CR2	S137-507
FUSE	
F1	101-240
INDUCTORS	
L1	S155-532
L2	S157-114
INTEGRATED CIRCUIT	
U1	134-802-00
RESISTORS	
R3	111-749
R4	112-192
R5	112-079
R7	112-977
R8	112-932
R9	118-140
R10	112-917
R14	S113-217
TRANSFORMER	
T1	C141-294
TRANSISTOR	
Q2	S130-280-20

ASSEMBLY NO. 822-912, 819-543 DRAWING NO. 863-693	
SCHEMATIC DESIGNATIONS OR PART DESCRIPTIONS	**JERROLD PART NO.**
CAPCITOR	
C101	S127-329
DIODES	
CR101, CR102	137-853
SPP-S-30P (or F)	
CR101, CR102	137-852
SPP-S-60P (or F)	
CR103, CR105	137-502
CR104	137-517
RESISTORS	
R101, R102, R103	113-102
R104	112-476
R105	112-272
R106	112-254
THYRISTORS	
Q101, Q102	137-515
Q103	137-516

All data subject to change without notice.

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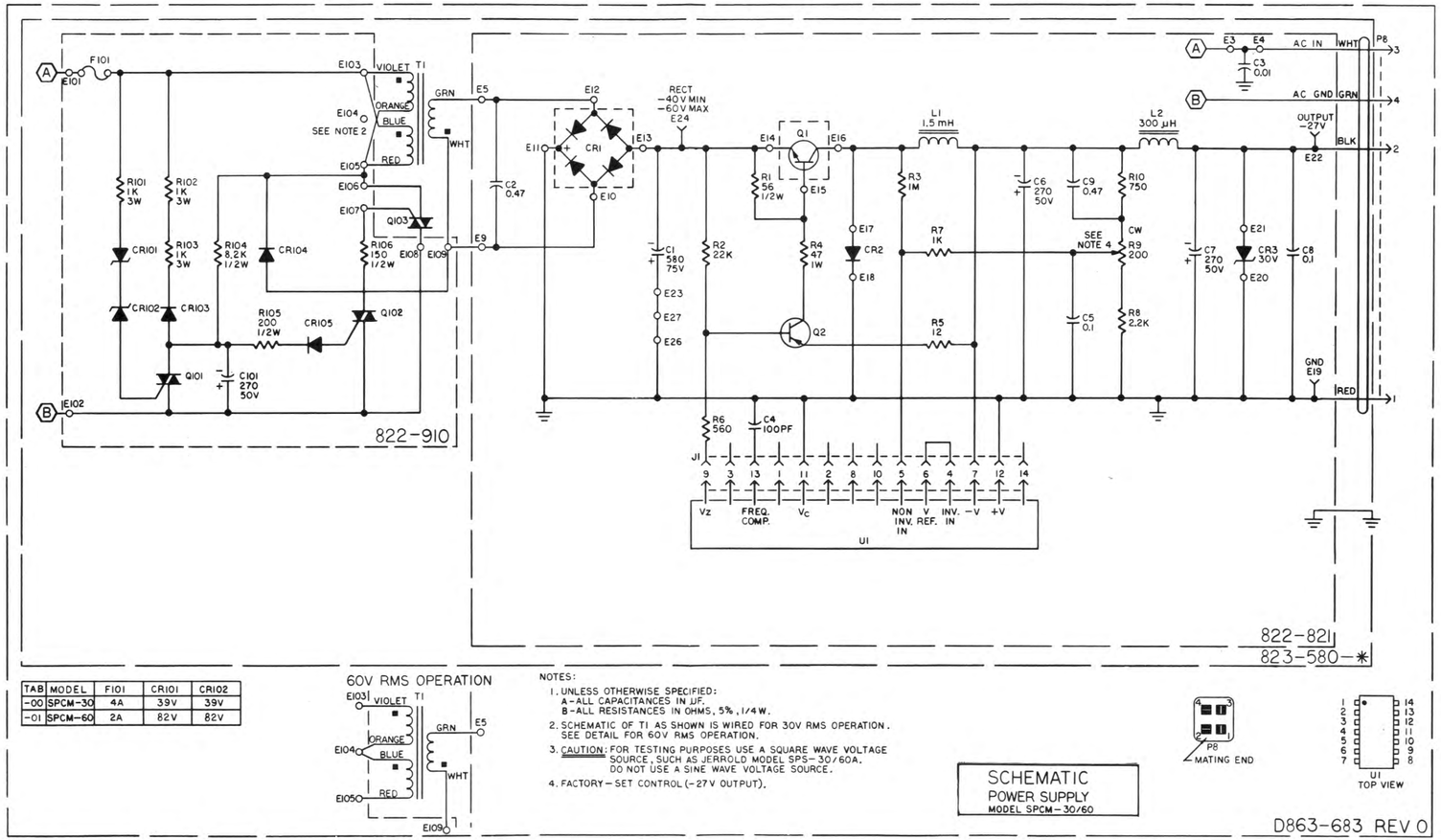
REPLACEMENT PARTS LISTS FOR MODELS SPCM-30 and SPCM-60

ASSEMBLY NO. 822-821, 823-580 DRAWING NO. 863-683	
SCHEMATIC DESIGNATIONS OR PART DESCRIPTIONS	**JERROLD PART NO.**
CAPACITORS	
C1	S127-177-00
C2, C9	125-332
C3	125-324
C4	126-091
C5, C8	125-337
C6	S127-329-01
C7	S127-329-00
DIODES	
CR1	S137-501-01
CR2	S137-507
CR3	137-844
FUSES	
F101 (SPCM-30)	B811-796-03
F101 (SPCM-60)	B811-796-04
INTEGRATED CIRCUIT	
U1	134-802-00
RESISTORS	
R1	112-203
R2	115-015
R3	111-041
R4	112-192
R5	112-079
R6	112-104
R7	112-977
R8	112-932
R9	118-140
R10	112-917
THYRISTOR	
Q103	137-516
TRANSFORMER	
T1	C141-294
TRANSISTORS	
Q1	S195-036
Q2	S130-280-20

ASSEMBLY NO. 822-910 DRAWING NO. 863-683	
SCHEMATIC DESIGNATIONS OR PART DESCRIPTIONS	**JERROLD PART NO.**
CAPACITOR	
C101	S127-329
DIODES	
CR101, CR102 (SPCM-30)	137-853
CR101, CR102 (SPCM-60)	137-852
CR103, CR105	137-502
CR104	137-517
RESISTORS	
R101, R102, R103	113-102
R104	112-476
R105	112-272
R106	112-254
THYRISTORS	
Q101, Q102	137-515

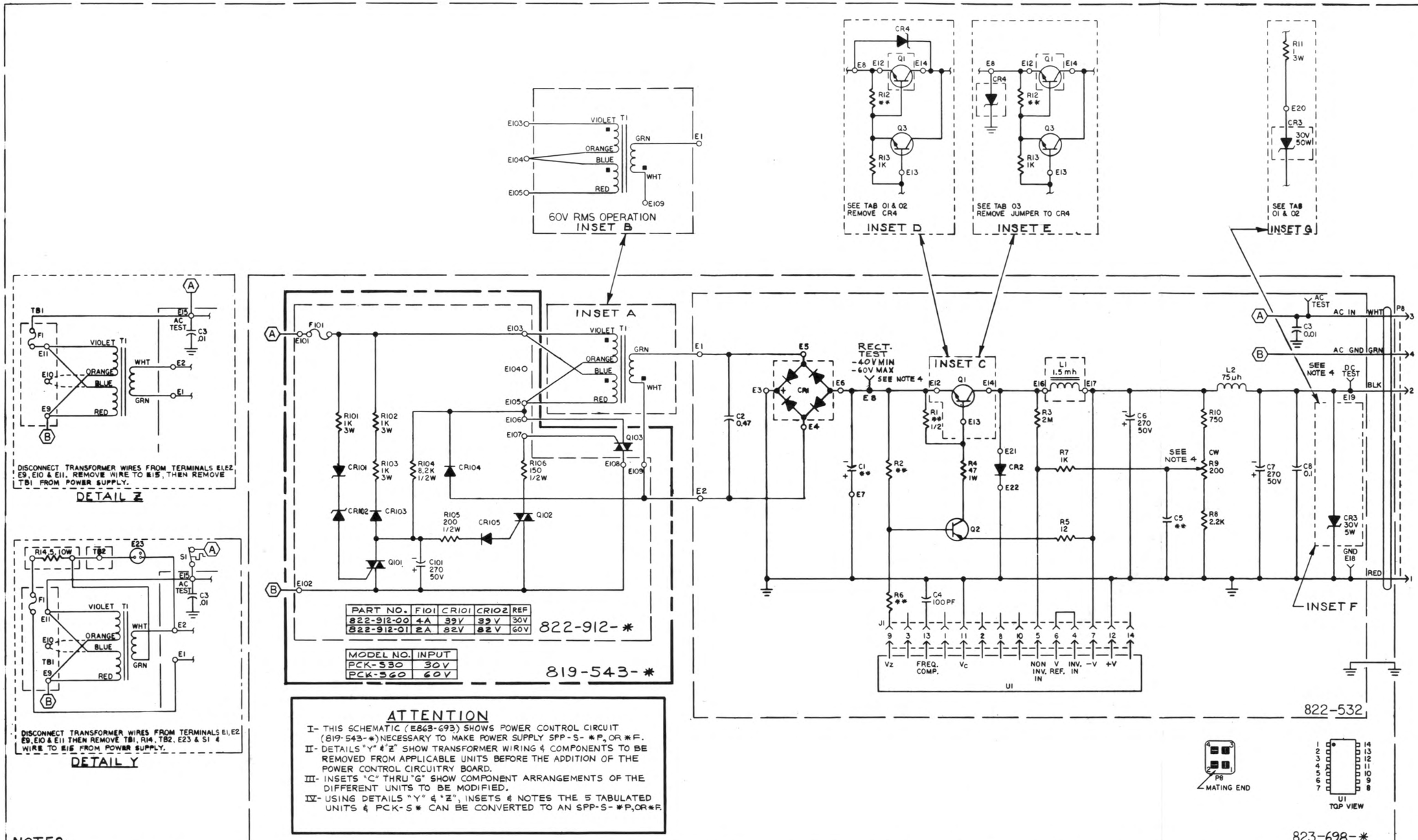


TAB	MODEL	F101	CR101	CR102
-00	SPCM-30	4A	39V	39V
-01	SPCM-60	2A	82V	82V

NOTES:
1. UNLESS OTHERWISE SPECIFIED:
   A - ALL CAPACITANCES IN µF.
   B - ALL RESISTANCES IN OHMS, 5%, 1/4 W.
2. SCHEMATIC OF T1 AS SHOWN IS WIRED FOR 30V RMS OPERATION. SEE DETAIL FOR 60V RMS OPERATION.
3. CAUTION: FOR TESTING PURPOSES USE A SQUARE WAVE VOLTAGE SOURCE, SUCH AS JERROLD MODEL SPS-30/60A. DO NOT USE A SINE WAVE VOLTAGE SOURCE.
4. FACTORY - SET CONTROL (-27V OUTPUT).

SCHEMATIC
POWER SUPPLY
MODEL SPCM-30/60

D863-683 REV 0



PART NO.	F101	CR101	CR102	REF
822-912-00	4A	39V	39V	30V
822-912-01	2A	82V	82V	60V

822-912-*

MODEL NO.	INPUT
PCK-S30	30V
PCK-S60	60V

819-543-*

ATTENTION

I- THIS SCHEMATIC (E863-693) SHOWS POWER CONTROL CIRCUIT (819-543-*) NECESSARY TO MAKE POWER SUPPLY SPP-S-*P, OR *F.
II- DETAILS "Y" & "Z" SHOW TRANSFORMER WIRING & COMPONENTS TO BE REMOVED FROM APPLICABLE UNITS BEFORE THE ADDITION OF THE POWER CONTROL CIRCUITRY BOARD.
III- INSETS "C" THRU "G" SHOW COMPONENT ARRANGEMENTS OF THE DIFFERENT UNITS TO BE MODIFIED.
IV- USING DETAILS "Y" & "Z", INSETS & NOTES THE 5 TABULATED UNITS & PCK-S* CAN BE CONVERTED TO AN SPP-S-*P, OR *F.

NOTES:

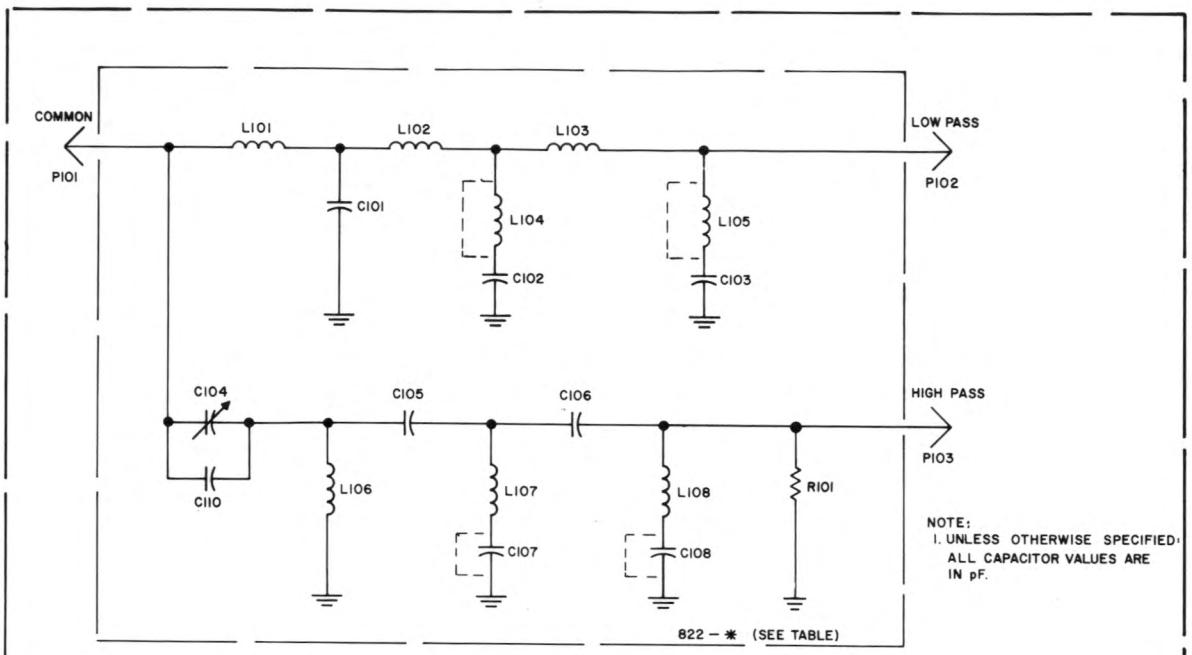
1- UNLESS OTHERWISE SPECIFIED:
   a- ALL CAPACATANCES ARE IN µF.
   b- ALL RESISTANCES ARE IN OHMS, 5%, 1/4 WATT.
2- TRANSFORMER T1 IS SHOWN WIRED FOR 30 V RMS OPERATION. SEE INSET B FOR 60 VRMS WIRING.
3- ASTERISKS ** APPLY TO COMPONENT TYPE OR VALUES USED IN VARIOUS FACTORY MODIFICATIONS. USE COMPONENT TABULATION FOR IDENTIFICATION OF PARTICULAR UNIT.
4- APPLY INPUT POWER TO OBTAIN -50 TO -60 V AT RECT TEST (E8) WITH A DC LOAD EQUIVALENT TO AN SP-2 STATION. THEN ADJUST R9 TO OBTAIN -27 V AT DC TEST POINT (E 19).
5- *P (FACTORY), *F (FIELD).

** COMPONENT TABULATION

TAB	C1	C5	Q1	Q3	R1	R2	R6	R11	R12	R13	REF INSET
-01	1000 UF 580 UF	5UF	130-288	130-287	33Ω	22KΩ	1KΩ	1Ω	100Ω	1KΩ	D & G
-02	1000 UF 580 UF	5UF	130-288	130-287	33Ω	22KΩ	560Ω	1Ω	33Ω	1KΩ	D & G
-03	1000 UF 580 UF	5UF	130-288	130-287	33Ω	22KΩ	560Ω	—	33Ω	1KΩ	E & F
-04	1000 UF 580 UF	0.1UF	S195-036 (TO-3)	—	33Ω	22KΩ	560Ω	—	—	—	C & F
-05	1000 UF 580 UF	0.1UF	S195-036 (TO-3)	—	100Ω	15KΩ	560Ω	—	—	—	C & F

SCHEMATIC
POWER SUPPLY
SPP-S-30P(or F), -60P(or F)

E863-693, REV A



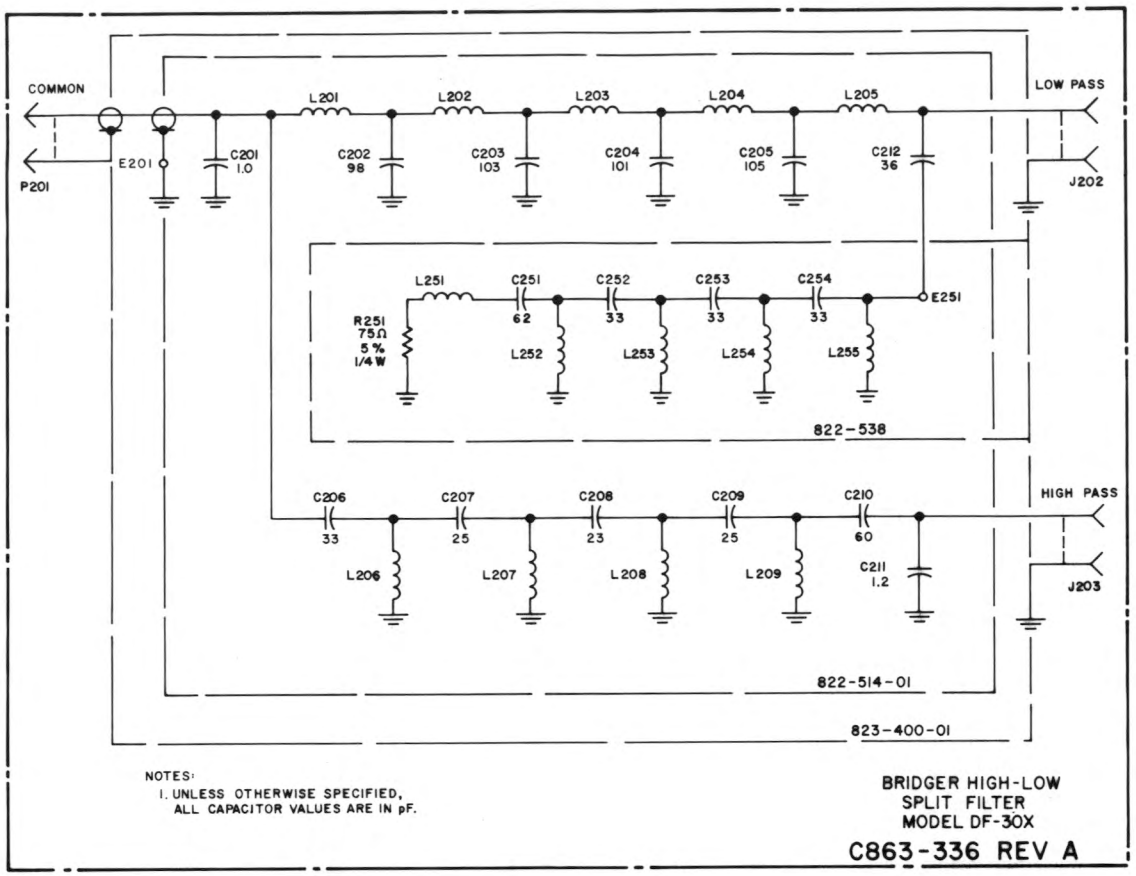
TAB	MODEL NO. ✱✱	P.C. BOARD ASSY ✱	C101	C102	C103	C104	C105	C106	C107	C108	C110	R101	L101	L102	L103	L104	L105	L106	L107	L108
-00	TF-30	822-508-00	108	48	37	3.5-13	38	42	70	82	30	OMIT	17 1/2 T	16 1/2 T	12 1/2 T	11 1/2 T	10 1/2 T	7 1/2 T	11 1/2 T	12 1/2 T
-01	TF-108	822-509	31	12.5	9.5	3.5-13	11	14.5	16	18	OMIT	OMIT	6 1/2 T	6 1/2 T	5 1/2 T	4 1/2 T	4 1/2 T	3 1/2 T	5 1/2 T	5 1/2 T
-02	TF-30X	822-508-01	106	106	48	3.5-13	28	33	JUMP	JUMP	30	75Ω	16 1/2 T	18 1/2 T	16 1/2 T	JUMP	JUMP	7 1/2 T	7 1/2 T	12 1/2 T

HIGH-LOW SPLIT FILTER
MODEL TF-✱✱
C863-312 REV. B

REPLACEMENT PARTS LIST

MODEL No. TF-30	
ASSEMBLY No. 822-508	
DRAWING No. C863-312-00	
SCHEMATIC DESIGNATIONS OR PART DESCRIPTIONS	JERROLD PART No.
CAPACITORS	
C101	S126-230-81
C102	S126-230-21
C103	S126-230-10
C104	128-225
C105	S126-230-11
C106	S126-230-15
C107	S126-230-43
C108	S126-230-55
C110	124-121
INDUCTORS	
L101	C150-008-71
L102	C150-008-93
L103	C150-008-31
L104	C150-008-37
L105	C150-008-46
L106	C150-008-08
L107	C150-008-13
L108	C150-013-09

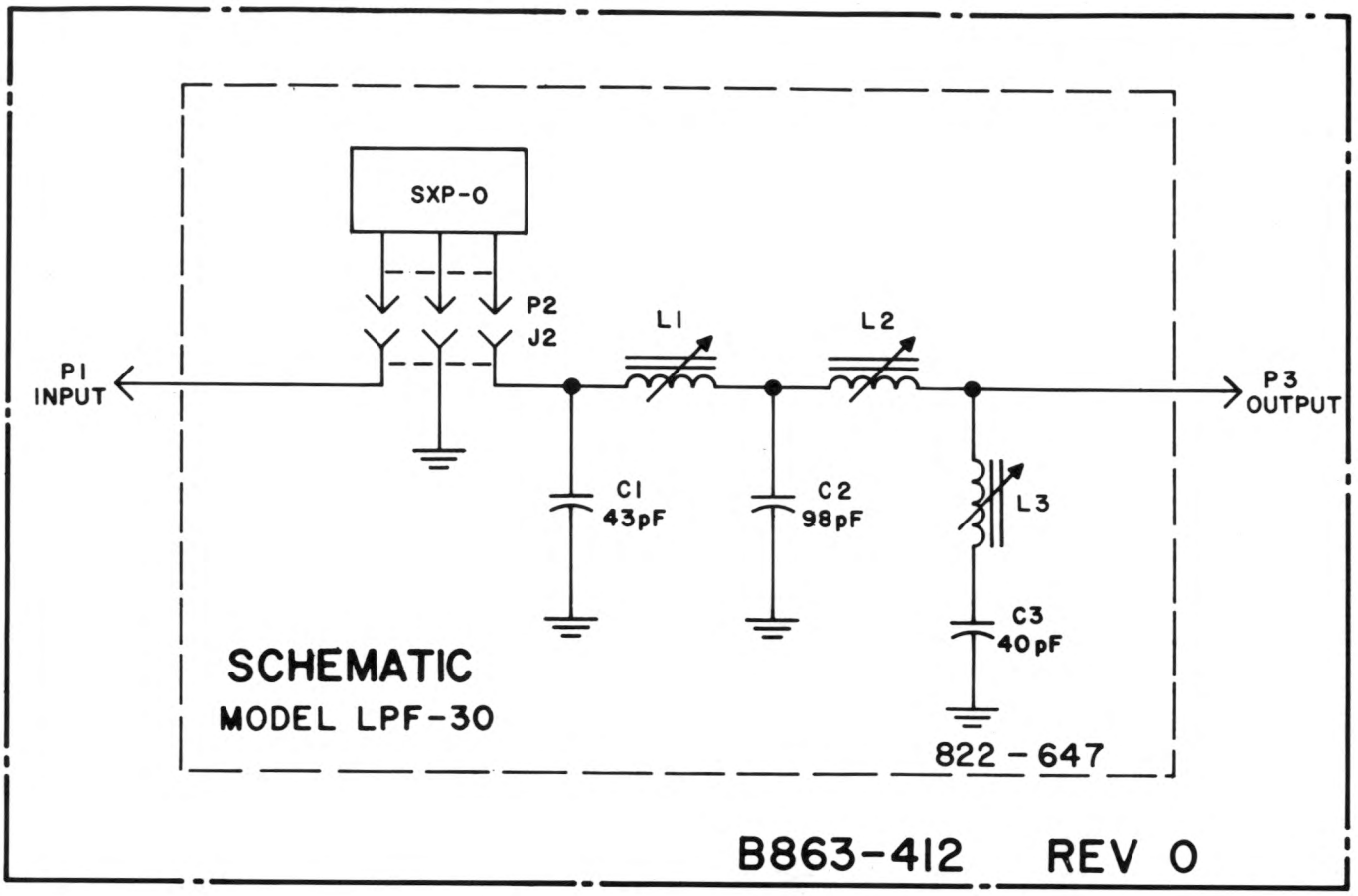
MODEL No. TF-108	
ASSEMBLY No. 822-509	
DRAWING No. C863-312-01	
SCHEMATIC DESIGNATIONS OR PART DESCRIPTIONS	JERROLD PART No.
CAPACITORS	
C101	S124-230-04
C102	S124-196-05
C103	S124-196-10
C104	128-225
C105	S124-196-02
C106	S124-196-09
C107	S124-197-02
C108	S124-197-06
INDUCTORS	
L101, 102	C150-008-27
L103, 107	C150-008-07
L104, 105	C150-008-10
L106	C150-008-03
L108	C150-008-88



REPLACEMENT PARTS LIST

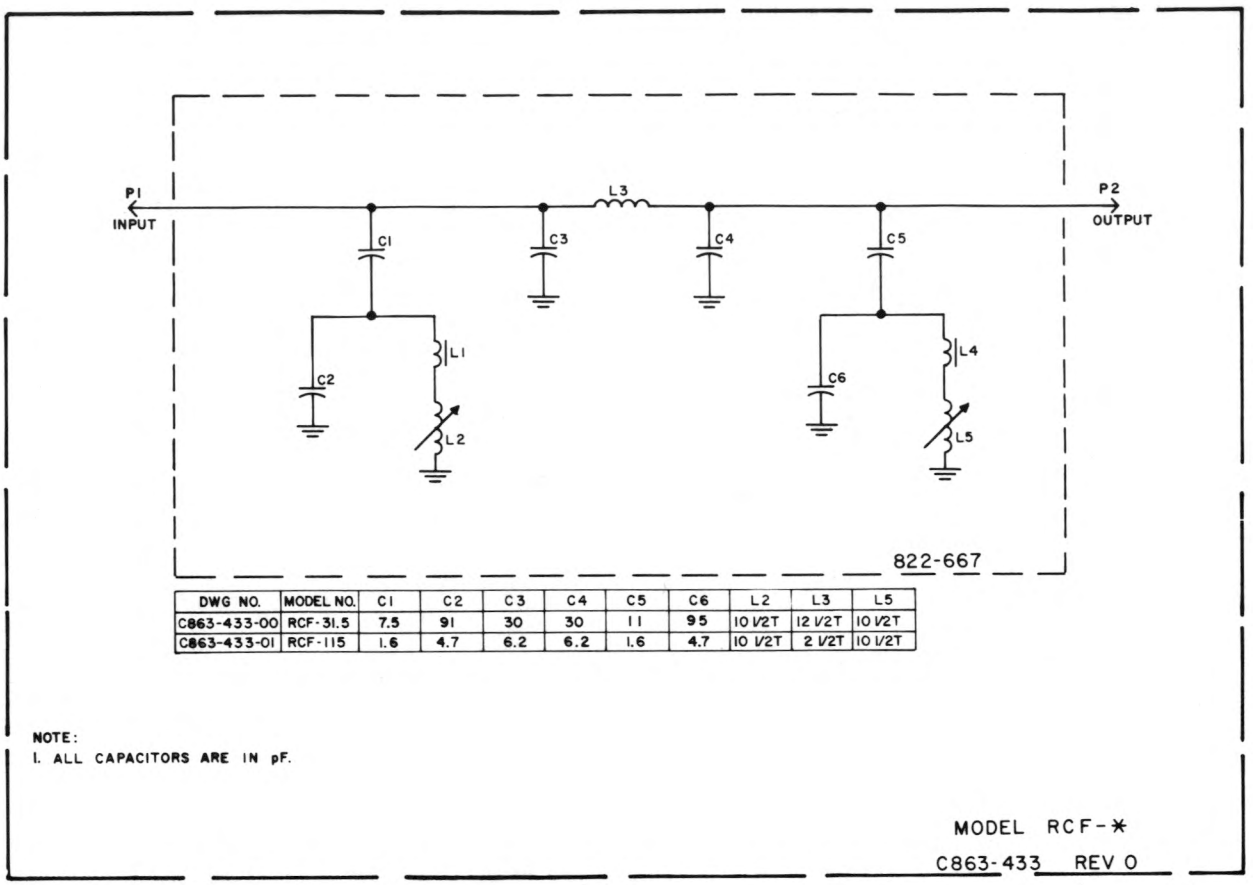
MODEL No. DF-30X	
ASSEMBLY No. 822-514-01	
DRAWING No. C863-336	
SCHEMATIC DESIGNATIONS OR PART DESCRIPTIONS	JERROLD PART No.
CAPACITORS	
C201	122-055
C202	S126-230-71
C203	S126-230-76
C204	S126-230-74
C205	S126-230-78
C206	126-223
C207, 209	126-231-00
C208	126-231-01
C210	S126-230-33
C211	122-091
C212	S126-230-09
CONNECTORS	
J202, 203	C821-155-1
INDUCTORS	
L201	C150-008-87
L202	C150-013-12
L203	C150-013-11
L204	C150-013-26
L205	C150-008-92
L206	C150-008-36
L207	C150-008-05
L208	C150-008-27
L209	C150-013-10

MODEL No. DF-30X	
ASSEMBLY No. 822-538	
DRAWING No. C863-336	
SCHEMATIC DESIGNATIONS OR PART DESCRIPTIONS	JERROLD PART No.
CAPACITORS	
C251	S126-230-35
C252, 253, 254	126-233-00
INDUCTORS	
L251	C150-008-09
L252	C150-008-16
L253, 254	C150-008-36
L255	C150-008-08
RESISTOR	
R251	112-954



REPLACEMENT PARTS LIST

MODEL No. LPF-30	
ASSEMBLY No. 822-647	
DRAWING No. 863-412	
SCHEMATIC DESIGNATIONS OR PART DESCRIPTIONS	JERROLD PART No.
CAPACITORS	
C1	S126-230-16
C2	S126-230-71
C3	S126-230-13
COIL ASSEMBLIES	
L1, 2	S155-530-04
L3	S155-530-01



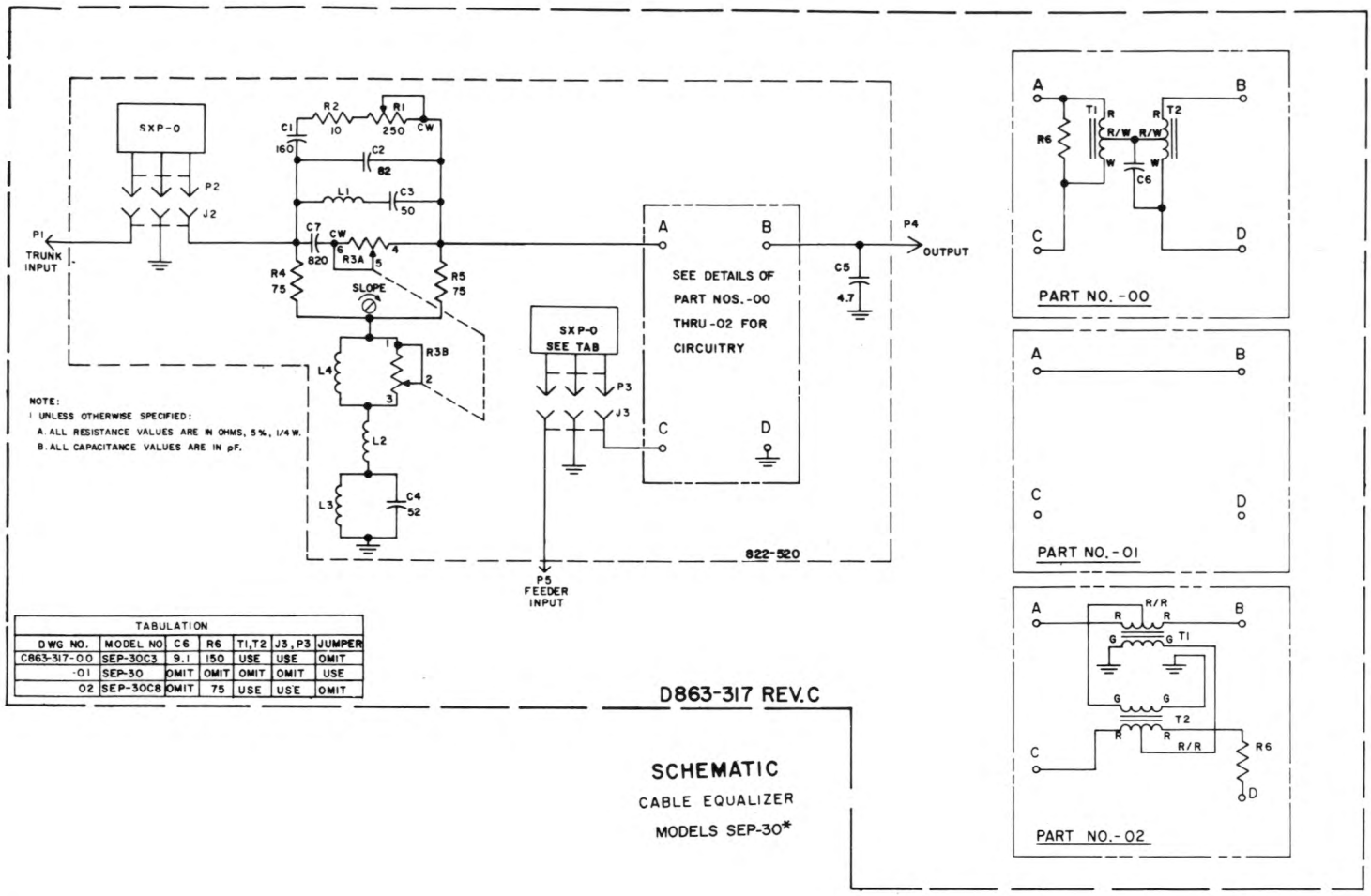
DWG NO.	MODEL NO.	C1	C2	C3	C4	C5	C6	L2	L3	L5
C863-433-00	RCF-31.5	7.5	91	30	30	11	95	10 1/2T	12 1/2T	10 1/2T
C863-433-01	RCF-115	1.6	4.7	6.2	6.2	1.6	4.7	10 1/2T	2 1/2T	10 1/2T

NOTE:
1. ALL CAPACITORS ARE IN pF.

MODEL RCF-*
C863-433 REV O

REPLACEMENT PARTS LIST

MODEL No. RCF-*N	
DRAWING No. C863-433	
SCHEMATIC DESIGNATIONS OR PART DESCRIPTIONS	**JERROLD PART No.**
CAPACITORS	
C1, RCF-31.5	124-072
RCF-115	122-098
C2, RCF-31.5	S126-230-64
RCF-115	124-061
C3, 4, RCF-31.5	126-098
RCF-115	124-139
C5, RCF-31.5	S126-196-02
RCF-115	122-098
C6, RCF-31.5	S126-230-68
RCF-115	124-061
SEE ALSO TABULATION ON SCHEMATIC	



TABULATION						
DWG NO.	MODEL NO	C6	R6	T1,T2	J3, P3	JUMPER
C863-317-00	SEP-30C3	9.1	150	USE	USE	OMIT
-01	SEP-30	OMIT	OMIT	OMIT	OMIT	USE
02	SEP-30C8	OMIT	75	USE	USE	OMIT

D863-317 REV.C

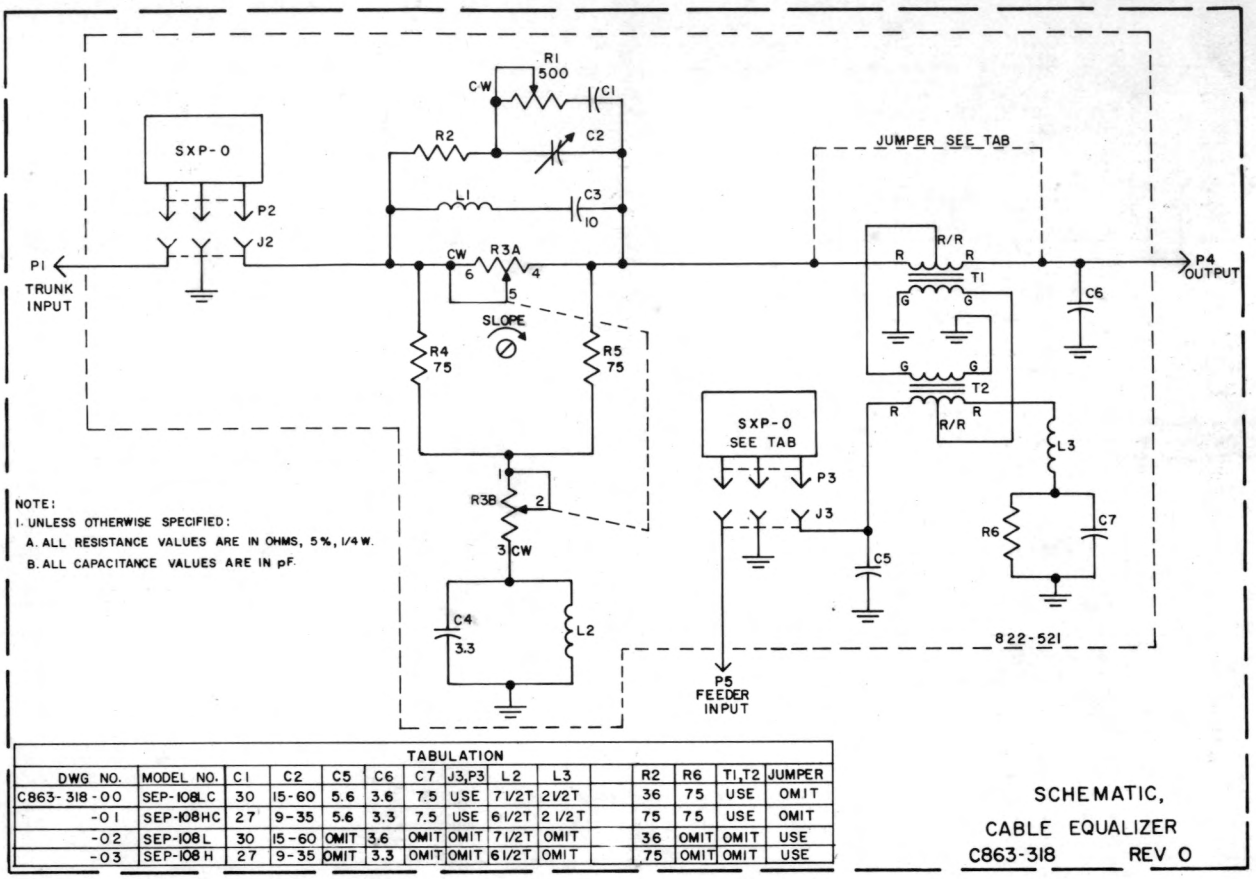
SCHEMATIC

CABLE EQUALIZER

MODELS SEP-30*

REPLACEMENT PARTS LIST

MODELS No. SEP-30C3, -30C8	
ASSEMBLY No. 822-520-00, -02	
DRAWING No. 863-317	
SCHEMATIC DESIGNATIONS OR PART DESCRIPTIONS	**JERROLD PART No.**
CAPACITORS	
C1	126-123
C2	126-166
C3	126-103
C4	S126-230-25
C5	122-069
C6 (SEP-30C3)	124-108
C7	126-218
RESISTORS	
R1	118-213
R2	112-077
R3A, B	S118-600
R4, 5	112-954
R6 (SEP-30C8)	112-954
TRANSFORMERS	
T1 (SEP-30C3)	B144-186-04
T2 (SEP-30C3)	B144-412-01
T1, 2 (SEP-30C8)	B144-415-02



TABULATION

DWG NO.	MODEL NO.	C1	C2	C5	C6	C7	J3,P3	L2	L3	R2	R6	T1,T2	JUMPER
C863-318-00	SEP-108LC	30	15-60	5.6	3.6	7.5	USE	7 1/2T	2 1/2T	36	75	USE	OMIT
-01	SEP-108HC	27	9-35	5.6	3.3	7.5	USE	6 1/2T	2 1/2T	75	75	USE	OMIT
-02	SEP-108L	30	15-60	OMIT	3.6	OMIT	OMIT	7 1/2T	OMIT	36	OMIT	OMIT	USE
-03	SEP-108H	27	9-35	OMIT	3.3	OMIT	OMIT	6 1/2T	OMIT	75	OMIT	OMIT	USE

SCHEMATIC,
CABLE EQUALIZER
C863-318 REV O

REPLACEMENT PARTS LIST

MODEL No. SEP-108LC	
ASSEMBLY No. 822-521-00	
DRAWING No. C863-318	
SCHEMATIC DESIGNATIONS OR PART DESCRIPTIONS	**JERROLD PART No.**
CAPACITORS	
C1	124-126-00
C2	128-224
C3	124-137-00
C4	124-113-00
C5	124-084-00
C6	122-068
C7	124-072-00
INDUCTORS	
L1	C150-008-7
L2	C150-008-8
L3	C150-008-1
RESISTORS	
R1	S118-407-03
R2	112-978
R3A, B	S118-600
R4, 5, 6	112-954
TRANSFORMERS	
T1, 2	B144-415-02

MODEL No. SEP-108HC	
ASSEMBLY No. 822-521-01	
DRAWING No. C863-318	
SCHEMATIC DESIGNATIONS OR PART DESCRIPTIONS	**JERROLD PART No.**
CAPACITORS	
C1	126-233-00
C2	128-565
C3	124-137-00
C4	124-113-00
C5	124-084-00
C6	122-057
C7	124-072-00
INDUCTORS	
L1	C150-008-7
L2	C150-008-8
L3	C150-008-1
RESISTORS	
R1	S118-407-03
R2, 4, 5, 6	112-954
R3A, B	S118-600
TRANSFORMERS	
T1, 2	B144-415-02